Quarterly Report – Public Page

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Contract Number:	693JK31810009
Prepared for:	DOT/PHMSA
Project Title:	Improved Tools to Locate Buried Pipe in Congested Undergrounds
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For quarterly period ending: October 31, 2019

Project Scope

The purpose of this project will be to mitigate third-party pipeline damage and cross bores at the earliest stages through the development and commercialization of a geospatial probe to map existing buried utilities by being inserted inside of a live gas pipeline. This probe will be capable of mapping live underground pipes 3-dimensionally and give accurate locations of utilities. Additionally, a cloud-based data collection system will be created in order to effortlessly collect and store data, so it is easily accessible to the utilities.

Technical Status

During the fifth quarter, Reduct constructed an alpha-prototype for the upgraded DuctRunner probe. A launch shoe was designed and 3D printed to complete a 90 degree pipe insertion, then guide the prototype through the launch shoe into the pipe. With the prototype mapping tool and 90 degree launch shoe, a successful demonstration was performed. The alpha-prototype was launched into a pipe, completed the 90 degree bend, and was then pushed with a pneumatic duct rod pusher. The prototype was able to traverse the pipe while being propelled by the duct rod pusher.

Additionally, GTI is working to streamline the distribution of the data collected by the mapping tool. The data was converted to be uploaded to ESRI GIS software. GTI will facilitate a discussion to gain utility feedback on methodologies to allow for seamless transition of the data collected by the mapping tool to their respective GIS software.

Results and Conclusions:

90 degree insertion and continued travel was successfully achieved with the mapping tool and pneumatic duct rod pusher. The mapping probe traversed 300 ft inside 2” PE pipe during testing even with the initial 90 degree bend upon insertion. While the team has been successful in demonstrating the ability of the probe to travel through the pipe, the team will continue to refine the process.

Plans for Future Activity:

During the next quarter, the following activities will be conducted:

- Task 4 will continue by gaining utility feedback on protocols to streamline the distribution of the data collected from the mapping probe to their GIS software.
- Task 5 will continue evaluating duct rod pusher and mapping tool in the test loop.